

A Concise History of Bicycling

It's difficult to pinpoint when the first bicycle came into existence. Suggestions of bicycle-like forms can be seen in the tombs of Egypt and among the frescoes of Pompeii. Leonardi da Vinci is purported to have sketched his idea for a bicycle about 1490. Regardless of when it all started, the impact of the bicycle on modern life has been phenomenal.

Some time around 1770, history shows that a bicycle-like vehicle was invented in France. It consisted of two wheels joined by a wooden frame which resembled the body of a horse. This early cycle, demonstrated for Marie Antoinette and the court of Versailles, failed to become popular with the French aristocrats and thus faded into oblivion. In the early 1800's, another version of this vehicle, the celerifere, was developed. The rider, better called a runner, straddled the wooden beam connecting the two wheels, rested his hands on a crossbar, and propelled the device by running. Because the celerifere had no steering mechanism and had to be pushed rather than pedaled, it never became widely used.

Around 1816, a German, Baron Karl Von Drais, made an improvement on the celerifere. A fork for the front wheel enabled the draisine, as this vehicle came to be known, to be steered by handlebars. The cycle was still propelled by running, however. Improvements over the next few years added an adjustable saddle and an armrest to make the rider more comfortable.

There were still many design problems to be resolved before the bicycle would gain widespread popularity. Brakes had not yet been developed and cycles were still heavy, but fragile.

The development of the bicycle inspired a heated debate over the virtues of such a vehicle. The bicycle was regarded as evil by some and as a threat by those who owned livery stables or who had stock in street railway systems. But those who were involved in bicycle manufacture or who simply enjoyed riding were not to be convinced.

The next step in the evolution of the bicycle was the velocipede, developed in Paris in 1863 by Pierre and Ernest Michaux. This vehicle, with pedals on the front wheel and a saddle fastened to the wooden frame with a steel spring, was known as the "bone shaker" because of its jarring ride. Even so, it became the first commercially important bicycle to be developed.

Imported into England in 1868, the velocipede fired the imagination of James Starley, a self-taught engineer



and the inventor, who immediately saw the possibilities of bicycle manufacture. Several hundred velocipedes were built and sold in England over the next few years.

Starley continued to improve the design of the bicycle, and in 1870, developed the high-wheeler, also known as the "ordinary" or the "penny farthing". This cycle designed to overcome the low gear ratio of the velocipede while retaining direct drive, had a front wheel of 40-60 inches in diameter and a rear "trailer wheel" of 20 inches or less. Made of iron instead of wood, and equipped with rubber tires, the ordinary was considered a picture of grace.

In 1876, the high-wheeler was imported to the United States to be displayed at the Centennial exhibition in Philadelphia. People were transfixed by the "ordinary" and one man from St. Louis bought the exhibition model to be displayed as one of the new wonders of the world. Albert A. Pope of Boston, a manufacturer of shoes and small mechanical parts, saw the commercial possibilities of this vehicle, and began to import high-wheelers from England. Using the English models as designs, he commissioned a mechanic to build a bicycle, allegedly the first real bicycle made in America. The result was a seventy-pound machine, which cost \$313. It launched Pope's career as father of America's bicycle industry.

Mounting and riding the ordinary required a great deal of skill. The rider had to run alongside the vehicle until it got up speed and then put the left foot on the mounting bar that was welded to the frame. Hoping that momentum would maintain the forward movement of the bicycle, the cyclists then vaulted into the saddle and frantically tried to get his feet on the pedals, which continued to turn with the front wheel. The rider's perch atop the high-wheeler proved unsafe because of the high center of gravity and cyclists often "took a header" over the front wheel, generally ending up in the ditch in a tangle of spokes and wheels. One effort to overcome the problem of mounting the ordinary and then staying aloft resulted in the development of the tricycle, introduced during the 1870's by James Starley of England.

At the time that the first bicycles were emerging, any athletic activity for women was still considered unladylike. The tricycle, however, was well-suited for women riders, who could sit between the two rear wheels, and need not show too much ankle, while riding down the street. Respectability for the new craze was established when England's Queen Victoria ordered two of Starley's Royal Salvo tricycles. Well-brought-up young victorian ladies could now get out on their own and participate in a healthy form of exercise. A trend of new clothing styles to accommodate the bicycle was led by Amelia Bloomer, for whom the particular style of dress was named.

Efforts to improve the safety and efficiency of the bicycle continued. Design innovations such as tubular framing, ball bearings, chain-and-sprocket drive, the brush-roller chain, and the pneumatic tire were developed over the next few years. These discoveries not only improved the bicycle, but had industrial application in many other areas, as well.

The final evolution of the bicycle to its modern form was introduced in 1885, by J. K. Starley, nephew of James Starley. The Rover Safety bicycle, as it was known, had most

of the features of a modern bicycle, including rear-wheel chain-and-sprocket drive, ball bearings in the wheel hubs, tangentially mounted wire spokes, lightweight tubular-steel construction and a diamond-shaped frame. Other "modern" innovations which appeared during the 1880's and 1890's included the freewheel mechanism, caliper and coaster brakes, the derailleur and the three-speed hub. Except for the recent development of recumbent bicycles, today's bicycle has not departed significantly from the Rover Safety.

The Rover Safety started a boom in bicycles that quickly established them as an everyday means of transport, as a sport vehicle and as a means of long distance touring. A further result of the popularity of bicycles was the demand for better roads. In Britain, two organizations which led the movement were the Cyclist's Touring Club, founded in 1878 and the Roads Improvement Association, chartered in 1886. In the United States, a similar movement was founded by Colonel Albert A. Pope of Boston, a pioneer in the manufacturing of bicycles. The League of American Wheelman (L.A.W.), founded in 1880, established a Committee for the Improvement of Public Roads in 1888. This group promoted the paving of roads through its booklet, "The Gospel of Good Roads" and its magazine Good Roads. Over the next few years, the L.A.W. developed and maintained a very powerful political alliance, including over 100,000 members and more than a million organized serious cyclists. In 1894, Harper's Magazine stated that "more than 90 percent of the expert road builders and fighters for better roads in the United States are to be found among the ranks of the L.A.W." Their arguments prevailed, and eventually legislation was passed and monies were set aside for the paving of roads.

In a relatively short period of time, the bicycle changed the world. With the availability of good roads, the suburbs were opened up to the working class, making it independent of horses, which most could not afford. The bicycle made the countryside accessible to the city dwellers and acted as a catalytic agent in the liberation of women. Through technological innovations and the advent of mass production, it served as a forerunner of both the automobile and the airplane. Bicyclists had won the battle for good roads, thus paving the way for the automobile.

